

Centre for Human Metabolomics

Final

Laboratory Report



Requisition: 50001562
Collection Date: 2019/09/28 06:15
Receiving Date: 2019/10/01 12:13
Final report: 2019/10/15 13:27
Results reported on: 2019/10/15 13:28
Cons. Ref. no.:

North West University (NWU)
Potchefstroom Campus
Biochemistry
Building F3
11 Hoffman Street
Potchefstroom
South Africa
2531
Tel (018)299 2310/2
Pr123

Patient:

ID: 780219
Date of birth: 1978/02/19
Age: 41Y
Gender: M
Address: 102 A Alcade Road
Lynnwood Glen
Pretoria
0081

Bill To: Biometrix Labs, Bioxl

Sample Type: Urine : Frozen
Visit: Repeat request
Patient Status: Clinical information received

Doctor: Biometrix Labs, Dr
Copy to:

Address: 102 A Alcade Road,
Lynnwood Glen, Pretoria,
0081

Requested: U-Creatinine, U-Uric Acid, U-Uric Acid Prodeo, U-Labstix, Turn Around Time, Quantitative Amino Acids Profile (u), Urine Organic acids

Interpretation: The microbial metabolic profile is marginally suggestive of gut dysbiosis, primarily of yeast/fungal origin. Marginal aberrations that are unlikely to be of clinical significance are noted on the remainder of the metabolic profile.

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Results:

Tests	Results	H/L	Reference ranges
Pre-Analytical Screening			
U-Creatinine	21.14		mmol/L
U-Uric Acid	2.7		mmol/L
Specific Gravity (U-Labstix)	1.03		
pH (U-Labstix)	5		
Leucocytes (U-Labstix)	Negative		
Nitrites(U-Labstix)	Negative		
Haemoglobin (U-Labstix)	Negative		
Blood (U-Labstix)	Negative		
Protein (U-Labstix)	Trace		
Glucose (U-Labstix)	Negative		
Ascorbic Acid (U-Labstix)	Negative		
Ketones (U-Labstix)	Negative		
Urobilinogen (U-Labstix)	Negative		
Bilirubin (U-Labstix)	Trace		
Urine amino acids			
4-Hydroxyproline (u)	0.00		0 - 13 mmol/mol creat
Alanine (u)	7.83		6 - 59 mmol/mol creat
Alpha-aminoadipic acid (u)	0.2		0 - 16 mmol/mol creat
Alpha-aminobutyric acid (u)	0.34		0 - 4 mmol/mol creat
Arginine (u)	0.71		0 - 5 mmol/mol creat
Argininosuccinic acid (u)	0.08		0 - 0.5 mmol/mol creat
Asparagine (u)	3.16		0 - 23 mmol/mol creat
Aspartic acid (u)	0.19	L	2 - 7 mmol/mol creat
Citrulline (u)	0.13		0 - 4 mmol/mol creat
Cystathionine (u)	1.85		0 - 15 mmol/mol creat
Cystine (u)	3.58		3 - 17 mmol/mol creat
Glutamic acid (u)	0.46		0 - 12 mmol/mol creat
Glutamine (u)	21		20 - 76 mmol/mol creat
Glycine (u)	31.29	L	43 - 173 mmol/mol creat
Histidine* (u)	12.44		9 - 128 mmol/mol creat
Isoleucine* (u)	0.42		0 - 4 mmol/mol creat
Leucine* (u)	1.02	L	2 - 11 mmol/mol creat
Lysine* (u)	1.7	L	7 - 58 mmol/mol creat
Methionine* (u)	0.42	L	1 - 4 mmol/mol creat
Ornithine (u)	0.66		0 - 5 mmol/mol creat
Phenylalanine (u)	1.5	L	2 - 19 mmol/mol creat
Pipecolic acid (u)	0.01		0 - 6 mmol/mol creat
Proline (u)	0.34		0 - 9 mmol/mol creat
Serine (u)	9.93	L	21 - 50 mmol/mol creat
Threonine* (u)	4	L	7 - 29 mmol/mol creat
Tryptophan* (u)	1.51	L	2 - 13 mmol/mol creat
Tyrosine (u)	2.09		2 - 23 mmol/mol creat
Valine* (u)	1.51	L	3 - 13 mmol/mol creat
Urine organic acids: Glycolysis and Krebs Cycle intermediates			
2-Oxoglutaric acid/2-Ketoglutaric acid	3.23		< 74 mmol/mol creat
Aconitic acid	28.54	H	5.2 - 16.3 mmol/mol creat
Citric acid	46.55	L	87 - 639 mmol/mol creat
D/L-2-Hydroxyglutaric acid	1.74		< 52 mmol/mol creat
DL-Lactic acid	2.12		< 16.4 mmol/mol creat
Fumaric acid	0.14	L	0.2 - 1.7 mmol/mol creat
Isocitric acid	12.85		< 119.1 mmol/mol creat
Malic acid	0.14		< 5.3 mmol/mol creat
Pyruvic acid	0.09		< 3.7 mmol/mol creat
Succinic acid	3.27		2.5 - 13.5 mmol/mol creat

Tests	Results	H/L	Reference ranges	
Urine organic acids: Fatty acid oxidation intermediates				
3-Hydroxybutyric acid	BDL		< 6.4	mmol/mol creat
Acetoacetic acid	0.04		< 24.9	mmol/mol creat
Adipic acid	1.65		< 5	mmol/mol creat
Ethylmalonic acid	1.45		< 4	mmol/mol creat
Methylsuccinic acid	BDL		< 6.2	mmol/mol creat
Sebacic acid	BDL		< 5	mmol/mol creat
Suberic acid	0.93		< 1.9	mmol/mol creat
Urine organic acids: Branched chain amino acid intermediates				
2-Ethylhydracrylic-/2-Ethyl-3-OH-propionic acid	1.03		< 2.9	mmol/mol creat
2-Hydroxyisocaproic acid	0.41	H	< 0.39	mmol/mol creat
2-Hydroxyisovaleric acid	BDL		< 0.48	mmol/mol creat
2-Oxoisovaleric acid / 3-Methyl-2-oxobutyric acid	0.14		< 1.1	mmol/mol creat
3-Hydroxy-2-methylbutyric acid	0.81		< 6.2	mmol/mol creat
3-Hydroxyisobutyric acid	4.41	L	11.8 - 59.8	mmol/mol creat
3-Hydroxyisovaleric acid	3.44		< 17.2	mmol/mol creat
3-Methyl-2-oxovaleric-/2-Keto-3-methylvaleric acid	BDL		< 4.8	mmol/mol creat
3-Methylglutaconic acid	1.95	L	2.3 - 8.3	mmol/mol creat
3-Methylglutaric acid	0.32	L	1 - 6.5	mmol/mol creat
4-Methyl-2-oxovaleric acid/2-Ketoisocaproic acid	0.19		< 0.86	mmol/mol creat
Malonic acid	BDL		< 3.1	mmol/mol creat
Urine organic acids: Phenylalanine and Tyrosine intermediates				
Phenylpyruvic acid	BDL		< 0.76	mmol/mol creat
3-Phenyllactic acid	BDL		< 0.49	mmol/mol creat
4-Hydroxyphenyllactic acid	0.87		< 3	mmol/mol creat
4-Hydroxyphenylpyruvic acid	BDL		< 4.3	mmol/mol creat
Mandelic acid	0.09		< 1.7	mmol/mol creat
Homogentisic acid	BDL		< 2.8	mmol/mol creat
Succinylacetone	4.69		< 4.7	mmol/mol creat
Urine organic acids: Other Amino acid intermediates				
3-Hydroxyglutaric acid (Lysine Metabolism)	1.24		< 3	mmol/mol creat
Glutaconic acid (Lysine Metabolism)	BDL		< 3.1	mmol/mol creat
N-Acetylaspartic acid (Aspartic Metabolism)	0.53		< 7	mmol/mol creat
Urine organic acids: Pyrimidine and Urea cycle intermediates				
Orotic acid	BDL		< 1.2	mmol/mol creat
Thymine	BDL		< 0.9	mmol/mol creat
Uracil	0.38		< 22.8	mmol/mol creat
Uric acid	127.72		93 - 329	mmol/mol creat
Urine organic acids: Detoxification markers				
2-Hydroxybutyric acid	BDL		< 6.9	mmol/mol creat
2-Methylhippuric acid	BDL		< 13.5	mmol/mol creat
Glyceric acid	0.12		< 28.8	mmol/mol creat
Glycolic acid	7.19		< 78.1	mmol/mol creat
N-2-Methylbutyrylglycine	BDL		< 2	mmol/mol creat
N-Butyrylglycine	BDL		< 2	mmol/mol creat
N-Hexanoylglycine	BDL		< 2	mmol/mol creat
N-Isobutyrylglycine	BDL		< 3.8	mmol/mol creat
N-Isovalerylglycine	BDL		< 10	mmol/mol creat
N-Phenylpropionylglycine	BDL		< 0.6	mmol/mol creat
N-Suberylglycine	BDL		< 0.52	mmol/mol creat
N-Tiglylglycine	0.04		< 2	mmol/mol creat
N-3-Methylcrotonylglycine	BDL		< 2	mmol/mol creat
Oxalic acid	32.25		1.11 - 33.34	mmol/mol creat
Pyroglutamic acid	4.91		< 24.9	mmol/mol creat
Urine organic acids: Micobiome markers				
2,5-Furandicarboxylic acid	10.07	H	< 5.4	mmol/mol creat
2-Hydroxyphenylacetic acid	1.08	L	1.4 - 3.7	mmol/mol creat
3,4-Dihydroxyphenylpropionic acid	0.17		< 0.35	mmol/mol creat

Tests	Results	H/L	Reference ranges	
Urine organic acids: Micobiome markers				
3,5-Dihydroxyphenylpropionic acid (DHPPA)	BDL		< 0.38	mmol/mol creat
3-Hydroxyphenyl-3-hydroxypropionic acid (HPPHA)	21.06		< 90	mmol/mol creat
3-Indoleacetic acid	1.23		< 5.4	mmol/mol creat
3-Oxoglutaric acid/3-Ketoglutaric acid	BDL		< 0.11	mmol/mol creat
4-Hydroxybenzoic acid	2.56		< 3.6	mmol/mol creat
4-Hydroxyhippuric acid	16.77		< 30	mmol/mol creat
4-Hydroxyphenylacetic acid	11.75		1.4 - 14.6	mmol/mol creat
5-Hydroxymethyl-2-furoic acid (Sumiki's acid)	2.78	H	< 1.7	mmol/mol creat
Arabinose	1.82		< 19.4	mmol/mol creat
Benzoic acid	BDL		< 6.5	mmol/mol creat
Citramalic acid	0.68		< 4.8	mmol/mol creat
Hippuric acid	422.15		28 - 610	mmol/mol creat
Hydrocinnamic acid/3-phenylpropionic acid	BDL		< 0.219	mmol/mol creat
N-2-Furanylcarbonylglycine	1.33		< 8.4	mmol/mol creat
p-Cresol	15.26		< 118.9	mmol/mol creat
Phenylacetic acid	BDL		< 5.07	mmol/mol creat
Tartaric acid	BDL		< 64.4	mmol/mol creat
Tricarballic acid	0.53	H	< 0.44	mmol/mol creat
Urine organic acids: Neurotransmitter intermediates				
4-Hydroxybutyric acid (GABA metabolism)	BDL		< 3.6	mmol/mol creat
5-Hydroxyindoleacetic acid (5-HIAA)	3.3		< 5.8	mmol/mol creat
Homovanillic acid (HVA)	3.2		< 8.9	mg/mmol creat
Quinurenic acid / Kynurenic acid	BDL		< 4.1	mmol/mol creat
Quinolinic acid	0.38		< 15.1	mmol/mol creat
Vanillic acid	BDL		< 0.19	mmol/mol creat
Vanillylmandelic acid (VMA)	2.99	H	< 2.8	mmol/mol creat
HVA/VMA ratio	1.07		0.16 - 1.8	
Quinolinic acid / 5-HIAA ratio	0.11		< 2	
Urine organic acids: Nutritional markers				
3-Hydroxy-3-methylglutaric acid (Q10)	1.46		< 5.2	mmol/mol creat
3-Hydroxypropionic acid (Biotin)	0.65		< 11.8	mmol/mol creat
4-Pyridoxic acid (Vit B6)	BDL		< 7.5	mmol/mol creat
Ascorbic acid (Vit C)	0.26	L	4.6 - 78	mmol/mol creat
Glutaric acid (Riboflavin)	0.2	L	0.7 - 3.6	mmol/mol creat
Methylcitric acid (Biotin)	0.31	L	1.2 - 1.8	mmol/mol creat
Methylmalonic acid (Vit B12)	0.67		< 2.1	mmol/mol creat
Mevalonic acid (Q10)	BDL		< 0.22	mmol/mol creat
N-Acetylcysteine (Glutathione cycle)	BDL		< 0.13	mmol/mol creat
Pantothenic acid (Vit B5)	BDL		< 4.4	mmol/mol creat
Xanthurenic acid (Vit B6)	BDL		< 1.72	mmol/mol creat

**Technical
Information:**

Davoren, Elmarie (E) Miss

GENERAL COMMENTS

BDL: The level of the reported metabolite is below the detection limit of the applied methodology. International reference ranges are currently applied.

South African population based reference ranges have not yet been established.

The uric acid level is determined via the chemical analyser platform with an enzyme based assay

*Essential amino acids.

NUTRITIONAL MARKER COMMENTS

Low or BDL 4-pyridoxic acid, ascorbic acid, pantothenic, N-acetylcystine may be suggestive of a deficiency/insufficiency in these micronutrient

Elevated glutaric acid, methylcitric acid, 3-hydroxy-3-methyl-glutaric acid, 3-hydroxypropionic acid, mevalonic acid, xanthurenic acid are suggestive of corresponding micronutrient marker deficiency/insufficiency. A low level is insignificant

Disclaimer: The requested analyses are not intended for the diagnosis of inborn errors of metabolism and the results are reported without interpretation.

Please take note that the reference ranges have changed as from 26 October 2018.